

Sheep Feed Management Strategies For Drought

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The tight feed supply prospects facing the Montana livestock industry will require special feed management throughout the winter months. Producers must design a feed management strategy that gets the most mileage from available feed supplies. Low quality feeds can be used during week 3 and 15 of pregnancy without reducing production if supplemented properly.

In years when feeds are limited producers can rely on non-traditional feeds to get through the winter. However, in these cases particular attention should be given to what the ewes are eating. If a ewe's nutritional requirement for lamb and wool production are not met, she will not produce at a satisfactory level. Likewise, a ewe, given the opportunity will eat twice as much as she needs. In order to stretch available feed resources, one must first determine the sheep's nutrient needs.

Table 1

A Ewes Nutrient Needs			
	DM	TDN	Protein
Early Pregnancy	3.1lb	1.7 lb	0.3 lb
Late Pregnancy	4.0lb	2.7 lb	0.4 lb
Early Lactation ^a	6.2lb	4.0 lb	0.9 lb

^aSuckling twins

When non-traditional feeds are being used to meet these needs there is often

not much safety margin and thus it becomes critical to know the nutrient content of the hay that is being fed. In years like this (i.e. there is not a year and ½ supply of high quality alfalfa hay stacked in the hay yard) it becomes essential that the hay is sampled and analyzed.

Only after the exact nutrient content of the available hays is known, can a feeding strategy that stretches available feed resources as much as possible be outlined. Remember we are feeding nutrients not hay.

Always sample and analyze hay

Strategy 1: Substituting grain for hay. Winter rations for sheep commonly are largely roughage; however substituting grain for hay may be economical depending upon availability and price relationships between the two. Drought conditions often shifts the economics toward grain. More nutrients per ton can be transported with a concentrated feed or grain compared to hay favoring the concentrated feed when it must be transported.

Table 2 is a comparison of various grains with several common hays used, based upon their energy value. On this basis, corn grain is worth 1.9 times as much as average quality grass hay. Said another way, one pound of corn will

replace 1.9 pounds of grass hay in a wintering ration based on energy value. It should be recognized that the ration provides more than just energy. The ration must be balanced for all of the nutrients if it is expected to perform adequately. Grains are usually low in protein and therefore the diet would be somewhat low in protein. This is usually not a problem since the ewe's protein requirements during early pregnancy are fairly low. If the alfalfa hay in the diet is good quality her protein requirements are most likely being met. If grass or poor quality hay is being used a protein supplement may be needed.

Also, ruminants do have a roughage need and as the proportion of the diet that is comprised of concentrate feeds (grain) is increased the potential for feeding problems is increased.

The basic nutritional requirements of a 150-pound ewe during early gestation can be met by 3.5 to 4 pounds of good quality hay per day. As a general rule of thumb up to $\frac{1}{2}$ of the hay in a ewes diet during the winter can be replaced by the equivalent nutrient value of grain and/or concentrate without much problem. If producers choose to replace over $\frac{1}{2}$ of the hay special precautions need to be taken. Research has shown that a minimum of $\frac{1}{2}$ pound of hay per 100 pounds of body weight is needed as a minimum amount of roughage.

Up to $\frac{1}{2}$ of the hay in a ewes diet during the winter can be replaced by the equivalent nutrient value of grain or concentrate.

Table 2.

ENERGY VALUE OF VARIOUS GRAINS COMPARED TO ALFALFA, MIXED AND GRASS HAY				
Grain	TDN	Amount Of Hay That Can Be Replaced By One Pound Of Grain		
		Alfalfa Hay (60% TDN)	Mixed Hay (53% TDN)	Grass Hay ^a (47% TDN)
Corn	91	1.5	1.7	1.9
Barley	83	1.4	1.5	1.8
Oats	76	1.2	1.4	1.6

^a $\frac{1}{2}$ Alfalfa, $\frac{1}{2}$ grass hay.

Strategy 2: Using straw in wintering rations. Although not common in the US, straw is often used as the primary roughage source in sheep rations. In the US its use is not very common since it is not very palatable (e.g. sheep do not like to eat straw) and there is usually an abundance of other forages available. However, given no other choice they will eat it.

Research in England suggests that straw can be fed to pregnant ewes as the sole roughage if it is clean and bright, free from mold and is supplemented with an

It is possible to substitute straw for up to about half of the hay in a ewe's winter diet. But when straw is used a protein supplement is almost always needed.

appropriate concentrate feed. In this research the nutrient needs of a 150 pound ewe can be met by consuming about 3.5 pounds of straw and 1 pound of a 20% protein supplement per day. From a practical point of view using straw as the sole roughage source may be stretching things a little to far and is generally not recommended. Remember, straw is not very high in nutrient content and thus it is critical that it be supplemented properly.

The trick is to make sure ewes are actually consuming the appropriate amount of straw. When feed in the long form sheep will at best only eat about

75% of what is offered. Chopping and/or adding about 5% molasses will increase straw consumption. Some producers have diluted liquid molasses with water until it was thin enough to work with and then top-dressed the straw after it has been spread in the bunks. Barley straw usually offers the best combination of palatability and

Test the straw to make sure it is not high in nitrates

digestibility, but wheat straw is acceptable. Oat straw tends to be the least palatable for sheep. Also it is critical (especially this year) to test the straw to make sure it is not high in nitrate—which can be toxic.

The conventional approach to feeding hay is to feed to appetite. This means offering sufficient amounts of straw so that only a small amount is refused. Another concept that has been adopted when using straw is to use the “grazing” approach. This takes advantage of a sheep’s ability to select a higher quality diet. It means offering straw in excess allowing the sheep to select out the most nutritious components and to reject the less nutritious components. In most cases leaf and leaf sheaths constitute up to half the weight of straw. When feeding unprocessed straw, offering twice the amount will increase the intake by about 30%. Unused straw can then be used as bedding.

Feeding more than the sheep will consume can increase a sheep's intake of straw